

**REMARKS**

In the outstanding Office Action, Claims 1, 3, 5-12, 15-18, 20, 22-30, 32, 34, 36, and 39 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Number 5,978,709 to Begemann et al. Claims 13 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Begemann et al. in view of U.S. Patent Number 5,253,644 to Elmvist. Reconsideration is respectfully requested in light of the following remarks.

Applicants' claimed invention, as set forth in independent claims 1, 17, 18, 30, and 36, is directed to a system and corresponding method that paces the heart at an overdrive pacing rate. The claimed system includes a detection unit that monitors for intrinsic heart beats during overdrive pacing. The system further includes an overdrive pacing rate increment unit that increases the overdrive pacing rate if at least two intrinsic beats are detected during a predefined period between about 8 and about 40 cycles.

Thus, the claimed system and method begins overdrive pacing the heart, and if at least two intrinsic beats are detected within an interval between about 8 and about 40 beats, then the overdrive pacing rate is increased. In this manner, the claimed system and method provide a dynamic system that increases the pacing rate based on detection of at least two intrinsic beats within the relatively long period.

In contrast, the Begemann et al. reference discloses a system and method for overdrive pacing that increases the overdrive pacing rate based on either 1) a single intrinsic event, or 2) 2-3 consecutive atrial senses (Col. 8, lines 50-54). Nowhere do Begemann et al. teach or in any way suggest a system that sets a period of between about 8 and about 40 cycles, and that looks for at least two beats within that period.

The Examiner contends that Begemann et al. disclose using "any predetermined program of rate adjustment" as a trigger to higher conditioning pacing, and cites to Column 8, line 57 for support. It is respectfully submitted that the Examiner is misreading Begemann et al. The full text of that segment is as follows: "Thus, after the step increase, rate can be adjusted in accord with any predetermined program of rate

adjustment, which may include holding the increased rate and then decreasing rate; alternately holding rate and decreasing; simply decreasing; etc.” (Col. 8, lines 56-60). Clearly this has nothing to do with a trigger for increasing the pacing rate, but rather how to adjust the rate after the rate has been increased in response to detecting a trigger. Thus, the only triggers explicitly taught by Begemann et al. are either a single intrinsic event, or 2-3 consecutive events.

The Examiner further contends that “Begemann et al. teach a change in pacing rate using three normal atrial senses (col. 9 @ 7-9) within a predetermined period, the period ranging 2-50 beats (col. 9 @ 11).” The full text of that segment is as follows: “The higher rate is continued for a predetermined period, e.g., 400-1,000 beats, but is terminated when five consecutive normal atrial beats (NAS) are sensed, or when three NAS are sensed with the pace conditioning routine running. The detection of return to a normal sinus rhythm may vary, e.g., 2-50 beats, or another programmed sequence involving normal atrial senses.” (Col. 9, lines 6-12). Thus, this portion of Begemann et al. is describing how the overdrive pacing routine is to be terminated upon detection of certain intrinsic events, and has nothing to do with triggering an increase in the overdrive pacing rate.

Accordingly, nowhere do Begemann et al. teach setting a predefined period between about 8 and about 40 cycles, looking for at least two intrinsic events within the predefined period, and then increasing the overdrive pacing rate in response to such a detection. Therefore, it is respectfully submitted that the claims are not anticipated by Begemann et al., and Applicants respectfully request withdrawal of that rejection.

Claims 13 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Begemann et al. in view of U.S. Patent Number 5,253,644 to Elmvist. As described above, Begemann et al. fail to teach or suggest Applicants' pending claims. Elmvist is cited solely because it teaches rhythm detection using at least two consecutive P-waves, and Elmvist fails to teach or in any way suggest overdrive pacing. Therefore, combining the teachings of Elmvist with Begemann et al. still falls short of Applicants' claimed invention.

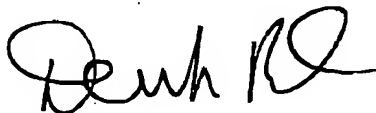
CONCLUSION

In light of the above remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

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Date



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